

REMARKS

Applicants submit this Response to the Office Action dated March 23, 2005. Claims 1-17 are pending in the application. Claims 1-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 1106824 A1 (“Visteon”) in view of U.S. Pat. No. 4,721,083 (“Hosaka”). This rejection is believed to be overcome in view of the amendments made to claims 1, 5 and 10.

The rejections from the Office Action dated March 23, 2005, are further discussed below in connection with the various claims. No new matter has been added. In view of this Response to Office Action, Applicants respectfully request the Examiner to withdraw the pending rejection and grant allowance of this Application.

I. REJECTIONS UNDER 35 U.S.C. § 103(a)

A. Independent Claim 1

Independent claim 1 was rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Visteon in view of Hosaka. Independent claim 1 has been amended to clarify that the second electric energy storage device is operative to charge the first electric energy storage device when the integrated starter alternator is operating as an alternator for producing electric energy.

Neither Visteon nor Hosaka discloses the second electric energy storage device that is operative to charge the first electric energy storage device when the integrated starter alternator is operating as an alternator for producing electric energy. Therefore, the combination of these two references fails to disclose this element.

Visteon discloses a system for starting an internal combustion engine of a vehicle using a starter/alternator. (Visteon, paras. 6-9 and 18.) Specifically, Visteon teaches that a battery provides electrical power for the starter/alternator that is stepped up to 300 volts to charge the ultra capacitors of an energy storage *when the starting process of the engine is initiated.* (Visteon, para. 20.) During that time, the starter/alternator shown in Visteon is used as a starter to supply torque to the engine. (Visteon, paras. 13, 19-20.) However, Visteon does not teach nor suggest a second electric energy storage device that is operative to charge a first electric energy storage device when the starter/alternator is operating as an

alternator for producing electric energy.¹ Instead, Visteon teaches that when the starter/alternator is in a generating mode, i.e., as an alternator, “the energy storage device 58, and batteries 64, 66 are monitored to determine whether they are fully charged . . . [and if the energy storage sources drop below a predetermined charge rate] the ultra capacitors of energy storage 58 are charged *directly by the power converter 56.*” (Visteon, para. 23.) Thus, Visteon teaches away from using the battery to charge the ultra capacitors of the energy storage when the starter/alternator is operating as an alternator.

Hosaka also fails to teach or suggest a second electric energy storage device that is operative to charge a first electric energy storage device when the integrated starter alternator is operating as an alternator for producing electric energy. Hosaka discloses an electronic control system for preventing engine stall in a standard combustion engine that uses a starter and an alternator. (Hosaka, Col. 1, lines 9-15; Col. 22, lines 37-45.) Hosaka also discloses a standard battery that can power the conventional starter motor or alternator to supply additional torque to an engine for preventing engine stall. (Hosaka, Fig. 1B, element 259; Col. 22, lines 37-45.) Hosaka, however, does not teach nor suggest a second battery or any other electric energy storage device that is operative to charge the standard battery. Indeed, a second electric energy storage device charging the standard battery would be unnecessary in the internal combustion engine disclosed in Hosaka because the standard battery, disclosed therein, provides sufficient power to drive the starter or alternator for preventing engine stall. Claim 1 should be allowed because it is not obvious in view of the combination of Visteon and Hosaka, as these references, alone or in combination, fail to disclose all of the elements of Applicants’ claim.

Moreover, one of ordinary skill in the art would not be motivated to combine Visteon and Hosaka to provide the claimed system for preventing stall of a vehicle engine. Visteon and Hosaka are directed to solving different problems. While Hosaka is directed to the problem of preventing the engine from stalling under all load conditions (Hosaka, Col. 2, lines 11-13), Visteon is directed to the problem of reducing the amount of differential torque

¹ The Examiner incorrectly states that Visteon discloses a controller that “compares said signal indicative of engine bus voltage to a first predetermined charge threshold value and controls said second electric energy storage device to charge said first electric energy storage device.” There is no suggestion or teaching in Visteon that the system

on the crankshaft of the engine during startup. (Visteon, para. 6). Even if the system for starting an engine using a starter/alternator taught by Visteon could be combined with the system for preventing engine stall using a starter and an alternator taught by Hosaka, there is no suggestion or motivation to do so. *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990) (Although a prior art device “may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.”)

The Examiner states that the motivation to combine the Visteon and Hosaka references would have been “to prevent the engine in Visteon from stalling.” Applicants respectfully submit that the Examiner’s conclusion of obviousness is based on improper hindsight reasoning. Visteon teaches that the starter/alternator is used to supply torque to the engine *before the combustion process in the engine is started*. (Visteon, para. 23.) There is nothing in Visteon to suggest incorporating a system for preventing stall of a vehicle engine, including the claimed controller that controls an integrated starter alternator to transmit a torque to the vehicle engine sufficient to prevent engine stall, which by definition must be after the engine is started and running. Indeed, the motivation, i.e., prevent engine stalling, is too general because it could cover almost any modification to the system shown in Visteon for preventing engine stall. Claim 1 also should be allowed because it would not have been obvious to one of ordinary skill in the art to combine Visteon and Hosaka to disclose all of the elements of Applicants’ claim.

Accordingly, Applicants request that the Examiner withdraw this rejection of independent claim 1.

B. Independent Claim 5

Independent claim 5 was also rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Visteon in view of Hosaka. Independent claim 5 has been amended to clarify that said first electric energy storage device is charged from said second electric energy storage device when said integrated starter alternator is operating as an alternator for producing electric energy. As discussed above in Section II.A, one of ordinary skill in the art

controller 54 monitors the energy storage device 58 to determine whether it is fully charged and controls the batteries 64, 66 to charge the ultra capacitors of energy storage 58.

would not be motivated to combine Visteon and Hosaka to provide a method for preventing stall of a vehicle engine, including charging a first electric energy storage device from a second electric energy storage device when the integrated starter alternator is operating as an alternator for producing electric energy, as claimed in claim 5. Therefore, claim 5 should be allowed because it is not obvious in view of the combination of Visteon and Hosaka.

Accordingly, Applicants request that the Examiner withdraw this rejection of independent claim 5.

C. Independent Claim 10

Independent claim 10 was also rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Visteon in view of Hosaka. Independent claim 10 has been amended to clarify that said first electric energy storage means is charged from said second electric energy storage means when said integrated starter alternator is operating as an alternator for producing electric energy. As discussed above in Section II.A, one of ordinary skill in the art would not be motivated to combine Visteon and Hosaka to provide a system for preventing stall of a vehicle engine, including means for charging a first electric energy storage device from a second electric energy storage device when a charge parameter relating to engine bus voltage is less than a second predetermined value and said integrated starter alternator is operating as an alternator for producing electric energy, as claimed in claim 10. Therefore, claim 10 should be allowed because it is not obvious in view of the combination of Visteon and Hosaka.

Accordingly, Applicants request that the Examiner withdraw this rejection of independent claim 10.

D. Dependent Claims 2-4, 6-8, and 11-14

Dependent claims 2-4, 6-9, and 11-14 were also rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Visteon in view of Hosaka. The dependent claims should be allowed for the reasons set out above for claims 1, 5 and 10, the claims from which they depend. Applicants therefore request that the Examiner withdraw this rejection of these claims.

II. NEW CLAIMS

With this response, new claims 15-17 have been added. Support for these claims may be found in the specification. No new matter has been added. New claims 15-17 should be allowed over the cited references for the same reasons as discussed above. Accordingly, Applicants request that the Examiner allow new claims 15-17.

CONCLUSION

Each of the rejections in the Office Action dated March 23, 2005, has been addressed and no new matter has been added. Applicants submit that all of the pending claims are in condition for allowance and notice to this effect is respectfully requested. The Examiner is invited to call the undersigned if it would expedite the prosecution of this application.

Respectfully submitted,



Mircea A. Tipescu
Registration No. 53,690
Attorney for Applicants
BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200